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REMARKS

Claims 1-42, as amended, remain herein.

Claims 1, 6, 7, 10, 12, 13, 14, 18, 23, 24, 28, 31, 32, 40 and 42 have been amended more clearly to recite applicants' invention. Claims 6, 7, 13, 14, 23, 24, 31 and 32 have been amended to remove the phrases "extracted from" and "a duration comprising."

Claims 1 and 18 have been amended to replace the term "Q switch" with "Q switch means for determining first and second pause periods."

Claims 10 and 28 have been amended to replace the phrase "a laser pulse train formed of a sequence of laser pulses" with "a laser pulse train including a first laser pulse at a beginning thereof and a second laser pulse next to the first laser pulse."

Claims 10 and 28 further have been amended to recite turning on the laser oscillation during a first pause period before generation of the first laser pulse, and turning the laser oscillation off during a second pause period before generation of the first laser pulse, and also turning the laser oscillation off during a period identical to the second pause

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period before generation of a second pulse and after the first pulse, wherein the interval between the first and second pulses is shorter than a sum of the first and second pause periods. The Examiner is directed to the specification, page 10, beginning at line 8 for a discussion of these matters.

Claims 38 and 41 have been amended to replace the phrase "said gain medium is irradiated with excitation light" with "further comprising means for irradiating said gain medium with excitation light."

Minor, editorial changes have been made in claims 10, 12, 18 and 40.

1. The Examiner states that proposed revised Fig. 8 submitted December 26, 2002, changed to include the label "Prior Art", is no longer required. Applicants so acknowledge.

2. Claims 6, 7, 13, 14, 23, 24, 31 and 32 were objected to for reciting the term "extracted from." The phrase

the second pause period is equal to a duration comprising a width of each of the laser pulses extracted from a period of the laser pulse train

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has been replaced with:

the second pause period is equal to a period of the laser pulse train minus a width of each of the laser pulses.

Also, claim 42 has been amended to depend from claim 28 to avoid duplication of claim 39.

3. Claims 6-8, 13-15, 23-25 and 31-33 were rejected under 35 U.S.C. §112, second paragraph. Claims 6, 7, 13, 14, 23, 24, 31 and 32 have been amended to remove the phrase "a duration comprising"; the rejection is moot.

Reconsideration and withdrawal of the rejection are respectfully requested.

4. Claims 1, 5-9, 18 and 22-26 were rejected under 35 U.S.C. §102(b) over applicants' admitted prior art. The rejection is traversed.

The presently claimed laser device includes a Q switch means for determining first and second pause periods, for turning on laser oscillation during a first pause period before

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generation of the laser pulse train, and for turning off the laser oscillation during the second pause period before generation of the laser pulse. This arrangement and corresponding method are nowhere disclosed or suggested in applicants' admitted prior art.

The Examiner alleges that the presently claimed laser device is described in applicants' admitted prior art, citing Fig. 13. In contrast, the presently claimed invention, shown in Fig. 8 and described in the specification at page 8, line 6 et seq., has a Q switch structure that turns on and off according to a calculated second pause period T_{2A} being a duration calculated by subtracting a pulse width TW from pulse period T_0 . Stated differently, the presently claimed Q switch means is for turning on laser oscillation during a first pause period before a generation of the laser pulse train, and for turning off the laser oscillation during a second pause period before a generation of the laser pulse, as recited in claims 1 and 18. Nowhere in applicants' disclosure, is there any statement that a prior art laser device has structure for operating in such a way.

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For the foregoing reasons, applicants' admitted prior art, as described in the specification, fails to disclose all elements of applicants' claimed invention, and therefore is not a proper basis for rejection under §102. And, there is no disclosure or teaching in applicants' admitted prior art that would have suggested the desirability of modifying any portions thereof effectively to suggest applicants' presently claimed invention. Claims 5-9, which depend from claim 1 are allowable for the same reasons as is claim 1, and claims 22-26, which depend from claim 18, are allowable for the same reasons as is claim 18. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

5. Claims 2 and 19 were rejected under 35 U.S.C. §103(a) over applicants' admitted prior art and Yin U.S. Patent 6,108,356. The rejection is traversed also.

Yin '356 is cited for disclosing locating a nonlinear optical crystal between mirror M1 and reflecting mirror M2. Regardless, Yin '356 does not teach or suggest a laser device including a Q switch means for determining first and second

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pause periods, for turning on laser oscillation during a first pause period before generation of the laser pulse train, and for turning off the laser oscillation during the second pause period before generation of the laser pulse, as recited in applicants' claims 1 and 18, from which claims 2 and 19 depend, respectively.

For the foregoing reasons, Yin '356 does not contain any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art, even after an assessment of admitted prior art, to applicants' claimed invention. Claims 2 and 19, which depend from claims 1 and 18, respectively, are allowable for the same reasons as are claims 1 and 18. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

6. Claims 3, 4, 20 and 21 were rejected under 35 U.S.C. §103(a) over applicants' admitted prior art and Smart U.S. Patent 6,339,604.

Applicants' admitted prior art fails to disclose all elements of applicants' claims 1 and 18 for the reasons given

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above. Smart '604 is said to teach a device for controlling a laser. However, Smart '604 does not overcome the above-noted deficiencies of applicants' admitted prior art. Smart '604 does not teach or suggest a laser device including a Q switch means for turning on laser oscillation during a first pause period before a generation of the laser pulse train, and also for turning off the laser oscillation during a second pause period before generation of the laser pulse train, as recited in applicants' claims 1 and 18.

For the foregoing reasons, neither applicants' admitted prior art nor Smart '604 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in either of these references which would have suggested the desirability of combining any portions thereof effectively to suggest applicants' presently claimed invention. Claims 3 and 4, which depend from claim 1, and claims 20 and 21, which depend from claim 18, are allowable for the same reasons as are claims 1 and

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18, respectively. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

7. Claim 27 was rejected under 35 U.S.C. §103(a) over applicants' admitted prior art and Johnson '901.

Applicants' admitted prior art fails to disclose all elements of applicants' claim 18 for the reasons described above. Johnson '901 is said to teach a laser processing machine. However, Johnson '901 does not overcome the deficiencies of applicants' admitted prior art noted above. Johnson '901 does not teach or suggest a laser device including a Q switch means for turning on laser oscillation during a first pause period before a generation of the laser pulse train, and also for turning off the laser oscillation during a second pause period before generation of the laser pulse train, as recited in applicants' claim 18, from which claim 27 depends.

For the foregoing reasons, neither applicants' admitted prior art nor Johnson '901 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor

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is there any disclosure or teaching in either of these references which would have suggested the desirability of combining any portions thereof effectively to suggest applicants' presently claimed invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

8. Claims 10-15, 28-33, 36, 39 and 42 were rejected under 35 U.S.C. §103(a) over Johnson '901 and Smart '604. The rejection is also traversed.

The Examiner cites Johnson '901 for disclosing a method for controlling a laser, and admits that the Johnson '901 device merely continuously (1) oscillates during the first pause period and (2) the excitation light has identical power during the first and second pause periods. Smart '604 is asserted to teach continuous laser oscillation during a portion of a first pause period. However, Smart '604 does not overcome the deficiencies of Johnson '901. [Smart '604 does not teach or suggest a laser device including a Q switch means for turning on laser oscillation during a first pause period before generation of the

Not claimed in claim 10

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laser pulse train, and also for turning off the laser oscillation during a second pause period before generation of the laser pulse train, as recited in applicants' claims 10 and 28.

For the foregoing reasons, neither Johnson '901 nor Smart '604 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in either of these references which would have suggested the desirability of combining any portions thereof effectively to suggest applicants' presently claimed invention. Claims 11-15 and 39, which depend from claim 10 and claims 28-33, 36 and 42, which depend from claim 28, are allowable for the same reasons as are claims 10 and 28. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

9. Claims 16, 34 and 35 were rejected under 35 U.S.C. §103(a) over Johnson '901 and Wiechmann et al. U.S. Patent 6,009,110. This rejection is traversed also.

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The Examiner cites Johnson '901 as allegedly disclosing a method for controlling a laser, and admits that (1) Johnson '901 discloses a device that merely continuously oscillates during the first pause period and (2) the excitation light has identical power during the first and second pause periods. Wiechmann '110 is cited as allegedly teaching generating a harmonic laser from a fundamental wave laser by laser oscillation. However, Weichmann '110 does not teach or suggest a laser device including a Q switch means for turning on laser oscillation during a first pause period before generation of the laser pulse train, and also for turning off the laser oscillation during a second pause period before generation of the laser pulse train, as recited in applicants' claims 10 and 28.

For the foregoing reasons, neither Johnson '901 nor Weichmann '110 contains any teaching, suggestion, reason, motivation or incentive that would have led one of ordinary skill in the art to applicants' claimed invention. Nor is there any disclosure or teaching in either of these references which would have suggested the desirability of combining any portions

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thereof effectively to suggest applicants' presently claimed invention. Claim 16, which depends from claim 10, is allowable for the same reasons as is claim 10, and claims 34 and 35, which depend from claim 28, are allowable for the same reasons as is claim 28. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

All claims 1-42 are now proper in form and patentably distinguished over all grounds of rejection cited in the Office Action. Accordingly, allowance of all claims 1-42 is respectfully requested.

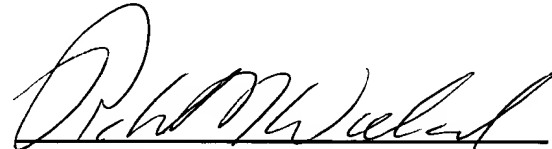
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Should the Examiner deem that any further action by the applicants would be desirable to place this application in even better condition for issue, the Examiner is requested to telephone applicants' undersigned representatives.

Respectfully submitted,

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Date


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